a theology of the earth

R. RENE DUBOS

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The earth photographed from space by Project Apollo astronauts. (National Aeronautics and Space Administration photo.)

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DR. RENE DUBOS

SMITHSONIAN INSTITUTION
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THE AUTHOR

Dr. René Jules Dubos, a professor of The Rockefeller University in New York City, is a microbiologist and experimental pathologist who first demonstrated the feasibility of obtaining germ-fighting drugs from microbes more than twenty years ago. Also a noted author of fourteen books, he received a Pulitzer Prize in 1969 for his book So Human an Animal. *He has been intensely concerned with the effects that environmental forces—physicochemical, biological, and social—exert on human life. His interest in the biological and mental effects of the total environment has involved him in the sociomedical problems of underprivileged communities as well as those created by economic affluence in industrialized countries. In this field of study, he has emphasized the environmental influences on the prenatal and early postnatal periods. A native of France, Dr. Dubos has been associated with The Rockefeller University since 1927. He is a member of the National Academy of Sciences, the Century Association of New York, and the American Philosophical Society. He holds twenty honorary degrees and sixteen awards.*

Ladies and gentlemen, the title of this lecture would be pretentious if it did not express profound feelings that I experienced a few months ago at the time of the Apollo 8 mission. Shortly after the return to earth of Apollo 8 the science editor of the Columbia Broadcasting System, Earl Ubell, interviewed the crew over the CBS network. Through skillful and persistent questioning he tried to extract from the astronauts what had been their most profound impression during their trip through space. What turned out was that their deepest emotion had been to see the earth from space. The astronauts had been overwhelmed by the beauty of the earth as compared with the bleakness of space and the grayness of the moon.

On the whole, I have been rather skeptical concerning the scientific value of the man-in-space program. But, while listening to the Apollo 8 crew, I became interested in that effort because I felt that it would pay unexpected dividends—namely, make us objectively aware, through our senses as it were, of the uniqueness of the earth among other bodies in the sky.

The incredible beauty of the earth as seen from space results largely from the fact that our planet is covered with living things. What gives vibrant colors and exciting variety to the surface of the earth is the fact that it is literally a living organism. The earth is living by the very fact that the microbes, the plants, the animals, and man

have generated on its surface conditions that occur nowhere else, as far as we know, in that part of the universe that we can hope to reach.
The phrase "theology of the earth" thus came to me from the Apollo 8 astronauts' accounts of what they had seen from their space capsule, making me realize that the earth is a living organism.

My presentation will be a mixture of the emotional response of my total being to the beauty of the earth, and of my mental processes as a scientist trying to give a rational account of the earth's association with living things. The phrase "theology of the earth" thus denotes for me the scientific understanding of the sacred relationships that link mankind to all the physical and living attributes of the earth.

I shall have to touch on many different topics because I want to convey my belief that we have collectively begun to engage in a kind of discovery of ourselves—who we are, where we belong, and where we are going. A few lines from T. S. Eliot in his poem "Four Quartets" seems to me the ultimate expression of what I shall try to express emotionally and to analyze scientifically:

We shall not cease from exploration
And the end of all our exploring will be
To arrive where we started
And know the place for the first time

All archaic peoples, all ancient classical cultures, have practiced some form of nature religion. Even in our times a large number of isolated, primitive tribes in Australia, in Africa, and in South America still experience a feeling of holiness for the land in which they live. In contrast, respect for the earth and for nature has almost completely disappeared from industrialized people in most of the countries that have accepted the ways of western civilization.

Primitive religion, with its sense of holiness of the environment, was always linked with magic. It is easy to understand how there can be links between primitive religious beliefs and the attempts to control nature through the mysterious

influences of the world. Even though they always have coexisted among primitive people, religion and magic represent two very different kinds of attitudes.

In the words of the anthropologist Malinovsky: "Religion refers to the fundamental issues of human existence while magic turns round specific, concrete and practical problems."

Most of my remarks this evening will be based on the conviction that the ecological crisis in the modern world has its root in our failure to differentiate between the use of scientific technology as a kind of modern magic and what I shall call modern religion, namely, knowledge as it relates to man's place in the universe and, especially, his relation to the earth.

All ancient peoples personified a locality or a region with a particular god or goddess that symbolized the qualities and the potentialities of that place. Phrases such as "the genius of the place" or "the spirit of the place" were commonly used in the past. All followers of ancient cultures were convinced that man could not retain his physical and mental health and fulfill his destiny unless he lived in accordance with the traditions of his place and respected the spirit of that place. I believe it was this attitude that helped ancient peoples to achieve rich and creative adjustment to their surroundings. Now you may say: "Spirit of place; genius of place? This is no longer for us. We are far too learned and sophisticated."

Yet, rationalistic and blasé as we may be, we still feel, deep in our hearts, that life is governed by forces that have their roots in the soil, in the water, and in the sky around us. The last part of Lawrence Durrell's book *Spirit of Place* deals with this very topic. There is not one among us who does not sense a deep meaning in phrases such as "the genius of New England" or

"the spirit of the Far West." We still sense that there is some kind of uniqueness to each place, each location, which gives it a very special meaning in our minds. But while we pine for the sense of holiness in nature, we do not know how to introduce this sense in our social structure. I am convinced that this has much to do with the ecological crisis.

I am not the first to express the feeling that we shall not be able to solve the ecological crisis until we recapture some kind of spiritual relationship between man and his environment. Some two years ago, for example, the learned American scholar Lynn White, Jr., a professor at the University of California in Los Angeles, delivered before The American Association for the Advancement of Science a special lecture titled "The Historical Roots of Our Ecologic Crisis." This lecture must strike a very sensitive chord in the minds of Americans because it has been reproduced again and again in several journals—ranging from *The Oracle,* the organ of the Hippie movement in San Francisco, to the plush magazine *Horizon.* Among the many interesting and important things White says, I single out a particular item with which I disagree in part. He stated that, in his opinion, the lack of reverence for nature on the part of modern industrial man, especially in the United States, and the desecration of nature by technology are consequences of biblical teachings. He traced them to the first chapter of Genesis in which it is said that man and woman were given the right and the duty to replenish the earth, subdue it, and have dominion over all living things. According to White, this biblical teaching has had such a profound and lasting influence on western civilization that it has made modern man lose any feeling for nature and to be concerned only with the conquest of nature for his own benefit. Also, White sees no hope of retracing our steps through science and technology because both exemplify the authority expressed in that statement in the first chapter of Genesis. The only solution

to the ecological crisis, therefore, is to try to recapture the worshipful attitude that the monks of the Franciscan Order had toward nature in the thirteenth century. The last sentence of White's lecture is, if my memory serves me right, "I propose Francis as a patron saint for ecologists."

All of us have some kind of sentimental, romantic sympathy with Lynn White's thesis. All of us are happy that there have been practical expressions of this attitude in the development of the national parks and in the attempts to preserve as much wildlife as possible. By preserving the state of certain wilderness areas, with their animals and plants, their rocks and marshes, mankind symbolizes that it has retained some form of respect for the natural world. In passing, it is not without interest that the United States—the country which has certainly been the most successful and has done the most toward achieving dominion over the earth through technology—is also the one country which is doing the most to save some fragments of wilderness. I wonder at times whether Glacier Park and Monument Valley do not represent a kind of atonement for God's own junkyard.

Despite my immense admiration for Lynn White's scholarship, I find it difficult to believe that the Judeo-Christian tradition has been as influential as he thinks in bringing about the desecration of the earth. One does not need to know much history to realize that the ancient Chinese, Greek, and Moslem civilizations contributed their share to deforestation, to erosion, and to the destruction of nature in many other ways. The goats of primitive peoples were as efficient as modern bulldozers in destroying the land. In any case, the Judeo-Christian attitude concerning the relation of man to nature is not

expressed only in the first chapter of Genesis. The second chapter of Genesis states that man, after he had been placed in the Garden of Eden, was instructed by God to dress it and to keep it—a statement which has ecological implications. To dress and keep the land means that man must be concerned with what happens to it.

Man is rarely, if ever, just a worshiper of nature, a passive witness of its activities. He achieved his humanness by the very act of introducing his will into natural events. He became what he is while giving form to nature. For this reason I believe that ecologists should select St. Benedict as a much truer symbol of the human condition than Francis of Assisi. Most of you probably know little about St. Benedict, perhaps even less about the history of the Benedictine Order. So allow me to elaborate on them for a few minutes because they represent a topic that is crucial to my personal attitude toward conservation.

St. Benedict created the first great monastery in the western world on Monte Cassino, in Italy, in the sixth century. He must have been a wise man, because when he formulated the rules of conduct for Monte Cassino—rules which became a model for monastic life all over the world—he decided that the monks should not only pray to God but also should work. Moreover, he urged that the monastery be self-sufficient. The rule of work and the need for self-sufficiency led the Benedictine monks to master a multiplicity of practical arts, especially those relating to building and to architecture. The monks learned to manage the land in such a manner that it supplied them with food and clothing, and in such a manner that it retained its productivity despite intensive cultivation. Moreover, they developed an architecture which was lasting, well-suited to the country in which they lived as well as to their activities, and which for these reasons had great functional beauty. Those of you who have traveled over the world know that the Benedictine monasteries are marvels of medieval architecture.

It seems to me that the Benedictine rule implies ecological concepts which are much more in tune with the needs of the modern world than is the worshipful attitude of St. Francis. Perhaps most influential among the monks who followed the Benedictine rule were those of the Cistercian Order. For reasons that I shall not discuss, the Cistercians established their monasteries in the lowlands and swamps: consequently, they had to learn to drain the land, and therefore they learned to use water power. And, through these technological practices, they converted areas of swamps and forests (that were not suitable for human habitation because of the prevalence of malaria) into wonderful fertile land which now makes up much of Europe's countryside.

If I have talked so long about St. Francis and St. Benedict it is not to give you a course in the history of medieval religion. Rather it is to illustrate two contrasting—but, I believe, equally important—attitudes toward nature: on the one hand, passive worship; on the other, creative intervention.

I have no doubt that the kind of worship symbolized by St. Francis helps man to retain his sanity by identifying himself with the totality of creation from which he emerged. Preserving the wilderness and all forms of wildlife is essential not only for esthetic and moral reasons but also for biological reasons.

Unfortunately, it will become increasingly difficult in the modern world to protect the wilderness from human use. In fact, no longer can there be any true wilderness. No fence is tight enough to shut out radiation clouds, air and water pollution, or noise from aircraft. Some ten or twenty years ago we could still escape from the insults of technological civilization by moving to the Rocky Mountains, to the Greek islands, or to the islands of the Pacific Ocean, but now the national parks and the isolated islands are almost as crowded and as desecrated as Coney Island. The only solution left to us is to improve Coney Island. In his short novel *Candide,* Voltaire

pointed out that Candide discovered at the end of his adventures that the surest formula for happiness was to cultivate one's own garden. I believe that our Garden of Eden will have to be created in our own backyards and in the hearts of our cities. Just as the Benedictine monasteries had to apply, although empirically, ecological principles so as to remain self-supporting and viable, so must we learn to manage the earth in such a manner that every part of it becomes pleasant.

The achievements of the Cistercian monks serve to illustrate another aspect of modern ecologic philosophy. As I mentioned before, the swamps in which they established their monasteries were unfit for human life because of insects and malaria. But monastic labor, skill, and intelligence converted these dismal swamps into productive agricultural areas, many of which have become centers for civilization. They demonstrate that transforming of the land, when intelligently carried out, is not destructive but, instead, can be a creative art.

My speaking of medieval times in Europe was not meant to convey the impression that only then have there been great achievements in the management of the land. One need only look at the Pennsylvania Dutch country to see a striking demonstration of land that has been created out of the forest, that became highly productive, and that has been well preserved. One could cite many similar feats all over the world. But the tendency at present is to determine the use of lands and waters, mountains and valleys, only on the basis of short-range economic benefits. And yet one can safely assert that sacrificing ecological principles on the altar of financial advantage is the road to social disaster, let alone esthetic degradation of the countryside. I shall now present

a few remarks about how we can create land. By this I mean taking nature as it is presented to us and trying to do with it something which is both suitable for human life and for the health of nature.

To do this it is essential that we identify the best "vocation" for each part of our spaceship. In Latin the word for "vocation" refers to the divine call for a certain kind of function. I wish we could apply this word, and indeed I shall apply it, to the different parts of the earth because each part of the earth has, so to speak, its vocation. It is our role as scientists, humanists, and citizens, and as persons who have a feeling for the earth, to discover the vocation of each part of it.

Certain parts of the earth, like certain persons, may have only one vocation. For example, there may be only one kind of thing that can be done with the Arctic country; there may be only a limited range of things that can be done with certain tropical lands. But in practice most places, like most persons, have several vocations, several options, and this indeterminism adds greatly to the richness of life. To illustrate with a few concrete examples what I have in mind, I ask that you consider what has happened to the primeval forest in the temperate parts of the world. I am not going to speak about the tropics, I am only going to speak of western Europe and the United States —the two parts of the world that I know best.

Much of the primeval forest in temperate countries has been transformed into farmland, but what is interesting is that each part of this primeval forest transformed into farmland has acquired its own agricultural specialization, social structure, and esthetic quality. On the other hand, the temperate forest need not become agricultural land. In Scotland and eastern England such lands progressively were transformed into moors— the famous moor country of the Scottish Highlands and eastern England. This happened largely through lumbering activities and also through the sheep grazing of the Benedictine

monks. The moors are not very productive from the agricultural point of view, but their charm has enriched the life of Great Britain and played a large part in literature. In North America, much of the primeval forest was transformed into prairie country as a result of the fires set by the preagricultural Indians. The prairies have now been converted in large part into agricultural land, but they have left a lasting imprint on American civilization.

I have quoted a few transformations of the land from one ecological state to another which have been successful, but I hasten to acknowledge that many other such transformations have not been as successful. Much of the country around the Mediterranean has been almost destroyed by erosion, and very little is left of the famous cedars of Lebanon. The transformation from one ecological state to another has given desirable results, especially where it has occurred slowly enough to be compatible with adaptive processes either of a purely biological nature or when it involved the adaptation of man to the new conditions. This is the case for the moors in Great Britain. In this case the creation of romantic moors out of forest land took a thousand years, so there was a chance for all the adjustments that always occur in nature, when there is enough time, to come about. Contrast this with what happened in many parts of the United States where massive and hasty lumbering has been responsible for ghost towns and for eroded land.

From now on most of the transformations of the earth's surface will occur so rapidly that we may often create those terrible situations resulting in erosion and destruction of the land. It therefore is urgent that we develop a new kind of ecological knowledge to enable us to

predict the likely consequences of massive technological intervention, and to provide rational guides as substitutes for the spontaneous and empirical adjustments that centuries used to make possible.

I have spoken so far chiefly of the transformations of the forest into new ecological structures that have economic value. But utilitarian considerations are only one aspect of man's relation to the earth. The widespread interest in the preservation of wildlife and primeval scenery is sufficient evidence that man does not live by bread alone and wants to retain some contact with his distant origins. In practice, however, the only chance that most people have to experience and enjoy nature is by coming into contact with its humanized aspects—cultivated fields, parks, gardens, and human settlements. It is, of course, essential that we save the redwoods, the Everglades, and as much wilderness as possible, but it is equally important that we protect the esthetic quality of our farmland, and to use this image again, that we improve Coney Island.

I wish there were time to discuss at length the factors that make for a beautiful landscape. Clearly, there is a kind of magic splendor and magnitude which gives a unique quality to certain landscapes. The Grand Canyon, the Painted Desert, and Niagara Falls are examples of scenery to which man's presence never adds anything, and may detract a great deal. In most cases, however, the quality of the landscape consists, in a sense, of fitness between man and his surroundings. This fitness accounts for most of the charm of ancient settlements, not only in the Old World but in the New World as well. The river villages of the Ivory Coast in Africa, the Mediterranean hill towns, the pueblos of the Rio Grande, the village greens of New England, and all the old cities so well organized around peaceful rivers represent many different types of landscapes that derive their quality not so much from topographical or climatic peculiarities as

from an intimate association between man and nature.

Among the many factors that play a role in the sense of identification between man and nature, let me just mention in passing how history and climate condition the architecture and the materials of dwellings and churches. Also, how the climate determines the shape and the botany of gardens and parks.

The formal gardens of Italy and France didn't just happen through accidents or through the fancy of some prince or wealthy merchant. These wonderful parks and gardens were successful because they fitted very well into the physical, biological, and social atmosphere of Italy and France at the time of their creation. Such formal parks and gardens also flourished in England, especially during the seventeenth century, but the English school achieved its unique distinction by creating an entirely different kind of park. The great and marvelous English parks of the late seventeenth and eighteenth centuries were characterized, as we all know, by magnificent trees grouped in meadows and vast expanses of lawn. This style was suited to the climate of the British Isles, to the abundance of rain, and to the fact that insolation is sufficiently limited to permit certain types of growth. In France many attempts were made in the eighteenth century to create gardens and parks in the English style. Except in a few cases, however, English-type parks and gardens were not very successful in France.

On this topic, there is an interesting letter of Horace Walpole, who was one of the prophets of the English landscape school. He traveled in France and after his return he expressed a critical opinion of the attempts to duplicate the English park on the Continent. "The French will never have lawns as good as ours until they have as rotten a climate," he wrote in a letter. This witticism expresses the biological truth that landscape styles can be lastingly successful only if they are compatible with the ecological imperatives of the countries in which they develop. This is what

Alexander Pope summarized in his famous line, "In everything respect the genius of the place." The word "genius" here express the total characteristics and potentialities of a particular area.

We should have Horace Walpole's phrase in mind when we look at what is being done in our large cities toward creating parks and gardens. Just as the climate in France cannot produce the green magnificence of the English parks, so in general the atmosphere in most of our large cities is unable to support most plant species. This does not mean that plant life is out of place in our cities, only that much more effort should be made to identify and propagate for each particular city the kinds of trees, flowers, and ground cover that can best thrive under its own particular set of climatic and other constraints. When I look on New York City parks and notice how their ordinary grass can appear so pathetic, and when I see how monotonous row after row of plain trees can be. I feel that botanists and foresters should be encouraged to develop other plant species congenial to urban environment. This is a wonderful field for plant ecologists because, in the very near future, pioneers of plant ecology are likely to be much more needed in the city than in the wilderness.

To summarize my remarks, let me restate that the "genius" or the "spirit of the place" is made up of all the physical, biological, social, and historical forces which, taken together, give uniqueness to each locality. This applies not only to the wilderness but also to human settlements—Rome, Paris, London, Hamburg, New York, Chicago, San Francisco—and I have selected these cities as representatives of very different types. Each of these cities has a genius that transcends its geographical location, commercial importance,

and population size. The great cities of the world contribute to the richness of the earth by giving it the wonderful diversity that man adds to the diversity of nature. The "genius of the place" will be found in every part of the world if we look for it.

In the final analysis the theology of the earth can be expressed scientifically in the form of an enlarged ecological concept. Since this theology will be formulated by human minds it inevitably will involve man's interplay with nature. We certainly must reject the attitude which asserts that man is the only value of importance and that the rest of nature can be sacrificed to his welfare and whims. But we cannot escape, I believe, an anthropocentric attitude which puts man at the summit of creation while still a part of it. Fortunately, one of the most important consequences of enlightened anthropocentricism is that man cannot effectively manipulate nature without loving nature for her own sake. And here I shall have to summarize a set of complex biological concepts in the form of general and dogmatic statements which, I hope, will convey to you some feeling of what I would have liked to state more scientifically.

It is not just a sentimental platitude to say that the earth is our mother. It is biologically true that the earth bore us and that we endanger ourselves when we desecrate her. The human species has been shaped biologically and mentally by the adaptive responses it has made to the conditions prevailing on the earth when the planet was still undisturbed by human intervention. Man was shaped biologically and mentally while responding to wild nature in the course of his evolution. The earth is our mother not only because she nurtures us now but especially because our biological and mental being has emerged from her, from our responses to her stimuli.

Furthermore, the earth is our mother in more than an evolutionary sense. In the course of our individual development from conception

to death, our whole being is constantly influenced by the stimuli that reach us from the environment. In other words, we constantly are being modified by the stimuli that reach us from nature and also from what we have done to the earth. To a great extent, we therefore come to reflect what we create. I shall restate here a phrase of Winston Churchill's that I quoted two years ago in this very room:

"We shape our buildings and afterward our buildings shape us."

This means that everything we create, good and bad, affects our development and, more importantly, affects the development of children. In his notes of a *Native Son* James Baldwin expressed even more vividly the influence of our environment on our biological and mental characteristics. Here are three phrases:

"We cannot escape our origins however hard we try, those origins which contain the key, could we but find it, to all that we later become."

"It means something to live where one sees space and sky, or to live where one sees nothing but rubble or nothing but high buildings."

"We take our shape within and against that cage of reality bequeathed us at our birth."

In the light of the remarks that I have presented to you, I have come to a sort of general philosophy about the meaning of the word "conservation"; and it is with a brief statement of this philosophy that I end my presentation. Conservation programs, whether for wilderness or for man-made environments, usually are formulated and conducted as if their only concern were to the human species and its welfare. Yet they can be effective only if they incorporate another dimension, namely, the earth and her welfare.

This is not sentimentality but hard biological science. Man and the earth are two complementary components of an indivisible system. Each shapes the other in a wonderfully creative symbiotic and cybernetic complex. The theology of the earth has a scientific basis in the simple fact that man emerged from the earth and then acquired the ability to modify it and shape it, thus determining the evolution of his own future social life through a continuous act of creation.

(Dr. Dubos then invited questions from the audience.)

Question by Frank M. Potter, Jr., executive director, Environmental Clearinghouse, Inc., Washington, D.C.:
When you were talking earlier about the necessity for striking a balance in nature it occurred to me that a basic problem is that an important part of the American myth is an uncritical belief in the desirability of a constantly growing economy —that somehow the development of our gross national product is felt to be one of the highest and best purposes that we can achieve. Can this be reconciled with your beliefs as to the rational way to treat nature?

Dr. Dubos:
I shall not discuss your question because I agree so profoundly with its spirit. I shall instead try to formulate the problem in a more positive form. Would it not be profitable to look in the world at large, and especially in this country, to recognize those situations in which people have survived and become reasonably prosperous but yet have maintained the environment around them in a form that is pleasant and viable? We would find, I believe, that in these situations men did not take growth *per se* as their goal. In the first chapter of Genesis man is instructed to populate the earth, subdue it, and gain dominion over it.

But in the second chapter man is instructed to take care of the earth. I wonder whether there is not an interesting historical aspect of man's relation to the earth implied in these two versions. There was a time, probably until the eighteenth century, when it was advantageous to increase the population to utilize the resources of the earth, and thereby to create social life. Now that this phase is completed and we have gone beyond it, the attitude expressed in the second chapter of Genesis is the one really relevant to our present condition.

The feeling that the only measure of success is creating more people and greater gross national income is a social invention not built in man's nature. In fact, we may be at the end of the phase when expansion just for the sake of growth is considered the chief social value. I am wondering whether—despite our sense of despair at seeing what is happening to this continent—we are not nearer than we think to a change in the national mood. One of the most interesting psychological events in the United States has been that, for the first time, we are beginning to hear many voices expressing that, as you said, the gross national income is not a goal of real value. I am impressed by the fact that this belief has been expressed in the United States, not in Europe. The probable reason is because it's here that technological society has been most successful. This topic is being discussed all over the country. I am aware that discussions and conferences do not solve problems, but they do create a climate of opinion which I am sure will change public attitude within your generation, if not mine.

Question by Dr. I. Eugene Wallen, Director, Office of Environmental Sciences, Smithsonian Institution:

You have indicated a position which in one sense makes you a prophet of doom. I wonder whether you would make a prediction as to what will happen when the gross national product begins to drop?

Dr. Dubos:
Answering this question would be pretentious on my part because it would imply knowledge of sociology and economics that I do not have. But it may be worthwhile to mention what is being done in Sweden. I have the impression that the policy of the Swedish government during the past twenty years has been to organize the national economy, not for the sake of increased gross national product but on the basis of rearranging the community. The Swedes may not have been successful everywhere, but they certainly have gone much further than we have toward saving the countryside, improving the cities, arranging the life of people in such a manner that growth for growth's sake is not the only ideal.
This does not mean abandoning technology but rather redirecting science. One of the crucial issues in our time is how we can continue to develop and utilize knowledge and to develop technology, not for the sake of growth but for the improvement of our total environment. There is so much to be done in this regard that it will occupy two or three generations. Nothing irritates me more in this respect than to hear that there won't be any work for anybody, that everything will be done by machines or computerized equipment. The crude fact is that 75 percent of the housing in this country should be destroyed because it is so bad and will obviously become slums in the near future. Reconstructing of our environment will not be done by computers, but it will demand that people become very much involved. The magnificent natural beauty of the United States is being spoiled everywhere, and everybody's participation is required to change this course. Fortunately, a few things are being done. To limit myself to only one example involving the use of powerful technology: See what is happening to some of the parkways. For example, the stretch of the Taconic State Parkway beyond New York. This is a product of technology which has transformed nature while still respecting her character. I think that the

Taconic State Parkway is a kind of creation which in some ways is the equivalent of the medieval cathedrals. It seems to me that it's all there to be done; it only demands a redirection of the national effort. I think we will find the way, because we always find political solutions when goals are sufficiently well-defined to permit creative and intelligent use of science and technology.

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